

APPENDIX B: MITIGATION AND MONITORING COMMITMENTS

Resource	Mitigation and Monitoring Commitments	Where to Include in BID Package	Comments/Status <sup>1</sup>
Air Quality	<ul style="list-style-type: none"> <li>Contractors will be required to reduce fugitive dust emissions during construction by implementing best management practices (BMPs), such as spraying exposed soils, covering trucks when transporting materials, minimizing mud tracking by vehicles, controlling vehicle speeds on construction access roads, and stabilizing construction entrances per CDOT M-208-1 requirements.</li> </ul>	Specification	
	<ul style="list-style-type: none"> <li>Contractors will be required to comply with BMPs to reduce air emissions from construction vehicles, such as reducing idling time of equipment and vehicles and using newer construction equipment or equipment with add-on emission controls.</li> </ul>	Specification	
	<ul style="list-style-type: none"> <li>Obtain an Air Pollution Emission Notice (APEN) from CDPHE Air Pollution Control Division</li> </ul>	Permit	
	<ul style="list-style-type: none"> <li>Contractors will be required to follow <i>CDOT's Standard Specifications for Road and Bridge Construction</i>.</li> </ul>	Specification	
Archaeology	<ul style="list-style-type: none"> <li>In the unlikely event that cultural deposits are discovered during construction, CDOT would follow its standard practice of ceasing work, consulting with the CDOT archaeologist, and evaluating materials in consultation with the State Historic Preservation Office (SHPO) to determine if mitigation is required.</li> </ul>	Specification	
Cumulative Impacts	<ul style="list-style-type: none"> <li>No mitigation necessary.</li> </ul>	NA	
Energy	<ul style="list-style-type: none"> <li>Measures to reduce energy consumption will include limiting the idling of construction equipment, locating construction staging areas close to the work site, minimizing motorist delays and vehicle idling, and coordinating general maintenance activities during construction to avoid excessive queuing and construction delays during peak hours.</li> </ul>	Plan/Specification	
Environmental Justice	<ul style="list-style-type: none"> <li>No mitigation measures are necessary.</li> </ul>	NA	
Farmlands	<ul style="list-style-type: none"> <li>No mitigation measures are necessary.</li> </ul>	NA	

<sup>1</sup> To be updated as project is implemented.

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Fish and Wildlife	<ul style="list-style-type: none"> <li>Obtain Senate Bill 40 Permit from CDOW.</li> </ul>	Permit/Plan	
	<ul style="list-style-type: none"> <li>Conduct surveys for bird nests before April 1 and remove any unoccupied nests in advance of construction.</li> </ul>	Specification	
	<ul style="list-style-type: none"> <li>Trees with active nests will not be removed between April 1 and August 31 to avoid impacts to migratory birds.</li> </ul>	Permit	
Floodplains	<ul style="list-style-type: none"> <li>Sediment traps, check dams, sediment basins, or other best management practices (BMPs) will be installed to control sedimentation during construction of drainage improvements in gulches. Specific BMPs will be determined during final design.</li> </ul>	Plan/Specification	
	<ul style="list-style-type: none"> <li>During final design, CDOT will coordinate with the appropriate local and federal agencies to conduct hydraulic analysis and obtain necessary floodplain permits.</li> </ul>	Plan/Permit	
Geological Resources and Soils	<ul style="list-style-type: none"> <li>Noise walls will be constructed according to FHWA's Highway Noise Barrier Design Handbook. This handbook recommends that construction of noise walls follow the requirements of American Society of Testing and Materials (ASTM) Standard D1557-91 (2007), "Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort," to ensure that soils are properly compacted and reduce the potential for settling near adjacent properties.</li> </ul>	Plan/Specification	
Hazardous Materials	<ul style="list-style-type: none"> <li>Protective measures will be taken before, during, and after construction to minimize the risk of encountering petroleum products and petroleum-contaminated soils. A full Phase I Environmental Site Assessment (ESA) according to American Society of Testing and Materials (ASTM) 2005 standards will be completed prior to any total property acquisition. Phase II ESAs will be conducted to characterize, manage, and remediate contaminated properties identified as concern in Phase I ESAs.</li> </ul>	NA	
	<ul style="list-style-type: none"> <li>CDOT will follow Specification 250 from the CDOT <i>Standard Specifications for Road and Bridge Construction</i> (2005) to protect worker health and safety.</li> </ul>		
	<ul style="list-style-type: none"> <li>A <i>Materials Handling Plan</i> will be prepared to address contaminated soil and groundwater that may be encountered as directed by the findings of Phase I assessments. The plan will be prepared according to CDOT standards.</li> </ul>	Plan	
	<ul style="list-style-type: none"> <li>Painted surfaces disturbed during construction or demolition and disposed of separately will be tested, handled, and disposed of properly.</li> </ul>	Plan/Specification	
	<ul style="list-style-type: none"> <li>An asbestos survey will be conducted and a demolition permit will be obtained prior to the demolition of bridges or buildings. Any asbestos-containing material that is friable or will be friable during construction and demolition activities will be removed prior to demolition by a licensed abatement contractor.</li> </ul>	Plan/Specification/Permit	

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Historic Properties	<ul style="list-style-type: none"> <li>A Memorandum of Agreement (MOA) has been negotiated among CDOT, FHWA, the Colorado SHPO, and Lakewood. CDOT will complete all mitigation stipulations prior to construction of the Build Alternative.</li> </ul>	NA (Sign, if applicable, to be included in Plan)	
Land Use	<ul style="list-style-type: none"> <li>Final design and right-of-way negotiations by CDOT will coordinate with the City of Lakewood to address compatibility with land use plans and the allowance of non-conforming properties that may result from right-of-way acquisition.</li> <li>CDOT will work with Lakewood during the right-of-way process to determine if variance for zoning nonconformance is appropriate in accordance with the revision to Article 17-16-9 of Lakewood's Municipal Code adopted by City Council July 13, 2009 (O-2009-32).</li> </ul>	NA	
Noise	<ul style="list-style-type: none"> <li>New noise walls will be constructed between the frontage roads and US 6 west of Wadsworth to Garrison Street. Preliminary design and noise modeling indicates that 15-foot walls are required for properties adjacent to US 6, 8-foot barriers are appropriate along the reconfigured frontage road in the NE quadrant (Green Acres neighborhood), and 4-foot safety barriers should be included along the US 6 bridge. Actual heights and configuration of noise barriers or equivalent will be confirmed in final design to achieve noise reductions modeled in the conceptual design.</li> </ul>	Plan	
	<ul style="list-style-type: none"> <li>Existing walls east of Wadsworth will be reconstructed as necessary.</li> </ul>	Plan	
	<ul style="list-style-type: none"> <li>Noise analysis will be conducted during final design to confirm noise wall heights and alignments.</li> </ul>	NA	
	<ul style="list-style-type: none"> <li>The use of absorptive materials for noise walls will be considered during final design of the project.</li> </ul>	NA	
	<ul style="list-style-type: none"> <li>During final design CDOT will consider adjusting the noise wall configuration to minimize impacts to the commercial property between Allison Street and Ammons Street so that the noise wall is located on the north side of the frontage road and wraps around the west side of the adjacent commercial property. With this configuration, the noise wall along the highway would begin just east of Ammons Street and continue west as currently described in the EA.</li> </ul>	NA	
	<ul style="list-style-type: none"> <li>CDOT will consider constructing permanent noise walls early in the overall construction schedule if feasible, to provide noise mitigation for temporary construction noise, as well as the long-term operational noise from US 6 traffic.</li> </ul>	NA	
	<ul style="list-style-type: none"> <li>During final design of the project, the City of Lakewood will have the opportunity to provide input on design elements related to noise mitigation, including grading, landscaping, color and material of any noise walls, with the goal of constructing an aesthetically pleasing and economically viable project.</li> </ul>	Plan	

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	<ul style="list-style-type: none"> <li>Construction noise impacts will be mitigated by limiting work to daytime hours (as described by CDOT and City of Lakewood requirements) when possible and requiring the contractor to use well-maintained equipment, including muffler systems.</li> </ul>	Specification	
	<ul style="list-style-type: none"> <li>Noise levels will adhere to State and local regulations, and vibration levels will adhere to industry standard thresholds for building damage.</li> </ul>	Plan/Specification	
	<ul style="list-style-type: none"> <li>Contractors will be required to follow <i>CDOT's Standard Specifications for Road and Bridge Construction</i>.</li> </ul>	Specification	
Paleontology	<ul style="list-style-type: none"> <li>The CDOT Staff Paleontologist will examine final plans to determine whether construction monitoring is required.</li> </ul>	NA	
	<ul style="list-style-type: none"> <li>Prior to construction, the CDOT Staff Paleontologist will examine the existing Denver Formation bedrock exposure that could not be examined previously because of snow cover at the time of original survey. If any scientifically significant fossil localities are discovered during that survey, CDOT will perform mitigation of construction impacts by systematic salvage of a statistically representative sample of the fossils found there, either prior to or during construction.</li> </ul>	N/A	
	<ul style="list-style-type: none"> <li>If sub-surface bones or other potential fossils are found during construction, work will cease. The CDOT Staff Paleontologist will assess the significance and make further recommendations.</li> </ul>	Specification	
Pedestrian and Bicycle Facilities	<ul style="list-style-type: none"> <li>Intelligent Transportation Systems (ITS) options, such as signing, lighting, and pavement treatments, will be considered in final design to improve safety of pedestrian and bicycle crossings of US 6 ramps on east side of Wadsworth.</li> </ul>	Plan	
	<ul style="list-style-type: none"> <li>A grade-separated pedestrian/bicycle crossing to remove conflicts between bicycles and pedestrians at the loop ramp on the west side of Wadsworth will be examined further in final design.</li> </ul>	Plan	
	<ul style="list-style-type: none"> <li>Signage and designated pedestrian and bicycle routes will be provided during construction.</li> </ul>	Specification	
	<ul style="list-style-type: none"> <li>Sidewalks will be designed to meet Americans with Disabilities Act (ADA) requirements.</li> </ul>	Specification	
Right-of-Way and Relocations	<ul style="list-style-type: none"> <li>All acquisitions and relocations will comply fully with federal and state requirements, including the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.</li> <li>CDOT will work with Lakewood regarding potential property nonconformance that may result from the right-of-way acquisition process in accordance with revised Lakewood Ordinance O-2009-32.</li> </ul>	NA	

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Section 4(f) and 6(f) Resources	<ul style="list-style-type: none"> <li>No mitigation necessary for Section 6(f) resources (none present)</li> <li>See Historic Resources for Section 4(f) mitigation</li> <li>No mitigation necessary for non-historic Section 4(f) resources</li> </ul>	NA	
Socioeconomics	<ul style="list-style-type: none"> <li>CDOT will coordinate with emergency service providers to identify possible locations for emergency access breaks in the medians.</li> </ul>	Plan	
	<ul style="list-style-type: none"> <li>CDOT will provide advance notice to emergency service providers, local schools, residents, and local businesses of upcoming construction activities that are likely to result in traffic disruption. This will be accomplished through direct contact, radio and public announcements, flyers, newspaper notices, onsite signage, and the use of the Lakewood and CDOT websites.</li> </ul>	Specification	
	<ul style="list-style-type: none"> <li>CDOT will provide for all-weather access and detours to minimize disruptions for businesses during construction.</li> </ul>	Specification	
	<ul style="list-style-type: none"> <li>Lane closures during construction will comply with CDOT's Region 6 Lane Closure Strategy (CDOT, 2005); if needed, variances will be requested.</li> </ul>	Specification	
	<ul style="list-style-type: none"> <li>CDOT will develop a traffic control plan and make that plan available to Lakewood and the CDOT public relations office prior to construction, who will relay additional notifications for lane closures.</li> </ul>	Plan	
	<ul style="list-style-type: none"> <li>Contractors will be required to follow <i>CDOT's Standard Specifications for Road and Bridge Construction</i>.</li> </ul>	Specification	
	<ul style="list-style-type: none"> <li>A construction newsletter will be prepared and distributed as needed to keep businesses, residences, and travelers up-to-date regarding construction activities, progress, detours, and lane closures.</li> </ul>	NA	
Threatened/Endangered Species	<ul style="list-style-type: none"> <li>No mitigation measures are necessary.</li> </ul>	NA	
Transportation	<ul style="list-style-type: none"> <li>Continue to coordinate with the Regional Transportation District (RTD) and City of Lakewood regarding development plans at and around the 13th Avenue LRT station.</li> </ul>	NA	
	<ul style="list-style-type: none"> <li>Coordinate with RTD and City of Lakewood on the placement and aesthetics of bus stops and shelters. Bus shelters would be provided by others.</li> </ul>	Plan	
	<ul style="list-style-type: none"> <li>Coordinate with RTD to ensure access to bus stops during construction.</li> </ul>	Specification	
	<ul style="list-style-type: none"> <li>Comply with CDOT Lane Closure Strategy for any lane closures during construction. Provide advance notice for extended lane closures, and identify detours with adequate signing to minimize out-of-direction travel.</li> </ul>	Scope of Work	

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Utilities	<ul style="list-style-type: none"> <li>Utility impacts will be mitigated through close coordination with CDOT, City of Lakewood, and utility providers.</li> </ul>	NA	
	<ul style="list-style-type: none"> <li>Relocations may be avoided by placing encasement for protection over buried utilities or through design modifications to avoid major utility impacts, such as the use of retaining walls, roadway profile variations, and/or horizontal alignment shifts. For those situations where impacts cannot be avoided, utilities will be relocated.</li> </ul>	Plan	
Vegetation and Noxious Weeds	<ul style="list-style-type: none"> <li>Vegetation removed during construction will be re-established as soon as feasible and reseeded with native vegetation.</li> </ul>	Specification	
	<ul style="list-style-type: none"> <li>Establishment of noxious weeds will be controlled by BMPs such as managing open soil surfaces and topsoil that is stockpiled for reuse.</li> </ul>	Specification	
	<ul style="list-style-type: none"> <li>Prior to construction the impact area will be surveyed for presence of noxious weeds.</li> </ul>	Specification	
	<ul style="list-style-type: none"> <li>An Integrated Noxious Weed Management Plan may be developed and implemented to prevent the spread of noxious weeds during construction.</li> </ul>	Specification	
Visual/Aesthetics	<ul style="list-style-type: none"> <li>CDOT will coordinate with Lakewood with regard to the aesthetics of the Build Alternative.</li> </ul>	NA	
	<ul style="list-style-type: none"> <li>City of Lakewood will install, irrigate, and maintain any landscaping in medians or other areas. Landscaping will comply with clear zone requirements.</li> </ul>	NA	
	<ul style="list-style-type: none"> <li>CDOT will continue to maintain any non-irrigated areas in the interchange area.</li> </ul>	NA	
Water Resources/Quality	<ul style="list-style-type: none"> <li>Permanent water quality treatment features will be included in the final design to collect and treat roadway runoff by filtering pollutants before discharging stormwater into area waterways.</li> </ul>	Plan	
	<ul style="list-style-type: none"> <li>A Colorado Discharge Permit System (CDPS) - Stormwater Construction Permit (SCP) will be required for this project. A Stormwater Management Plan will be developed in accordance with the conditions of the SCP.</li> </ul>	Specification/Plan	
	<ul style="list-style-type: none"> <li>CDOT will follow the Water Quality Consent Decree requirements, which was issued to CDOT by the CDPHE in January 2009.</li> </ul>		
	<ul style="list-style-type: none"> <li>Obtain the appropriate CDPS general permit for management of groundwater from CDPHE Water Quality Control Division.</li> </ul>	Permit	
	<ul style="list-style-type: none"> <li>Erosion and sediment control BMPs will be implemented in accordance with CDOT Standard Specifications for Road and Bridge Construction and the revised provisions for water quality outlined in the Consent Order with CDPHE and incorporated into Section 107.25 (Water Quality) and Section 208 (Erosion Control).</li> </ul>	Specification/Plan	

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	<ul style="list-style-type: none"> <li>Contractors will be required to follow <i>CDOT's Standard Specifications for Road and Bridge Construction</i>.</li> </ul>	Specification	
Wetlands and Waters of the US	<ul style="list-style-type: none"> <li>Obtain a Section 404 permit for impacts to wetlands and WUS. The U.S. Army Corps of Engineers (USACE) has confirmed informally that a Nationwide Permit (14 and/or 27) would be applicable.</li> </ul>	Plan/Permit	
	<ul style="list-style-type: none"> <li>Complete a wetland finding during final design, which will include a final assessment of impacts and a detailed plan for mitigation.</li> </ul>	Plan/Specification	
	<ul style="list-style-type: none"> <li>Unavoidable impacts to wetlands resulting from the Build Alternative will be mitigated on a one-for-one basis in accordance with CDOT policy, resulting in no net loss of wetlands.</li> </ul>	Permit	